

PATENT ABSTRACTS OF JAPAN

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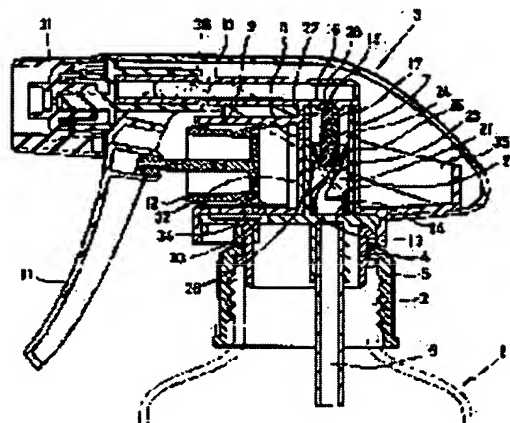
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(54) TRIGGER LIQUID SPOUTING VESSEL

(57)Abstract:

PROBLEM TO BE SOLVED: To form a suction valve and delivery valve of the trigger liq. injection vessel with one valve member integrally formed by a synthetic-resin material.

SOLUTION: The upper ends of the plural elastic screw-thread pieces 23 projected upward from the upper face of a short cylinder 22 into a vertical cylinder 7 provided to the spout unit of this trigger liq. spouting vessel are connected to the lower face of a plug rod 24, an inverted skirt-shaped elastic sealing cylinder 25 is projected upward and outward from the outer face of the plug rod 24 to constitute a valve member 21, the short cylinder 22 is fitted into the lower part of the vertical cylinder 7, the screw-thread pieces 23 are compressed, a valve element 26 at the upper end of the plug rod 24 is pressed on the lower face of the periphery of the second flange hole of a second inward flange 16 attached to the upper end of the vertical cylinder 7 to form a delivery valve 27, and the periphery of the upper end of the sealing cylinder 25 is pressed on the inner wall face of the vertical cylinder below a liq. passage hole 8 to form a suction valve 28.



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CLAIMS

[Claim(s)]

[Claim 1] It consists of a bottle object 1 and a trigger type liquid blowout machine 3 which made this bottle object regio oralis equip with the lower part free [attachment and detachment]. This liquid blowout machine It has the vertical tube section 7 with liquid inlet passage 6 which hangs to the pars basilaris ossis occipitalis in a bottle object, this vertical tube section, and the liquid in-and-out hole 8 open for free passage in a posterior wall of stomach. The cylinder 9 which carries out front projection from the front face of the vertical tube section, and the injection cylinder 10 which carries out front projection from a vertical tube section upper bed, In the trigger type liquid blowout container which has the trigger 11 which hangs from injection cylinder anterior part, and the plunger 12 which fitting is carried out and connects the front end section in the above-mentioned cylinder in the trigger upper part While forming the 1st inward flange 14 which has the 1st flange hole 13 as liquid inlet passage 6 part in the vertical tube section 7 above-mentioned soffit While connecting with **** 24 underside two or more piece of elastic **** 23 upper beds which the 2nd inward flange 16 with 2nd flange hole 15 which is open for free passage in the injection cylinder 10 was formed [upper beds] in the upper bed section of the vertical tube section 7, and carried out upper part projection from short cylinder 22 top face While forming the valve portion material 21 which really fabricated the reverse skirt-board-like elastic seal cylinder 25 by the projecting synthetic-resin material to the method of the outside of a top from a **** outside surface and making the above-mentioned short cylinder 22 attach to the lower inner surface of the vertical tube section 7 Where it resisted elasticity and the piece 23 of elastic **** is compressed somewhat, carry out a pressure welding to the valve seat 17 in which the underside side periphery of the 2nd flange hole forms the valve element section 26 which the **** upper bed section forms, and a discharge valve 27 is formed. Furthermore, the trigger type liquid blowout container characterized by having carried out the pressure welding of the upper bed periphery of the elastic seal cylinder 25 watertight to vertical tube section 7 internal surface of liquid in-and-out hole 8 lower part, and forming an inlet valve 28.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to a trigger-type liquid blowout container.

[0002]

[Description of the Prior Art] For example, as JP,8-266964,A shows, it has the liquid in-and-out hole which opens the sucking pipe as a liquid inlet passage for free passage with the vertical tube section which hangs from a soffit, and this vertical tube section in a posterior wall of stomach, The trigger type liquid blowout container which made the bottle object regio oralis equip with the Tori Karr style liquid blowout machine lower part which has the cylinder which carries out front projection from the front face of the vertical tube section, the injection cylinder which carries out front projection from a vertical tube section upper bed, the trigger which hangs from injection cylinder anterior part, and the plunger which fitting is carried out and connects the front-end section in the above-mentioned cylinder in the trigger upper part free [attachment and detachment] is used widely.

[0003]

[Problem(s) to be Solved by the Invention] If a plunger retreats the inside of a cylinder by trigger *****, the above-mentioned trigger type liquid blowout container If the liquid in a cylinder is spouted from the nozzle with which this injection cylinder front end was made to equip through a liquid in-and-out hole and a injection cylinder by high voltage-ization in a cylinder and a trigger is detached Although it was what was prepared so that a plunger might carry out an auto return, and the inside of a cylinder might negative-pressure-ize, then it might suck up and the liquid in a bottle object might be absorbed into a cylinder through a pipe, and had the inlet valve in the lower part of the vertical tube section and usually had the discharge valve in the upper part of the vertical tube section again, this etc. had trouble, in order to prepare independently. This invention prepares the valve portion material made of synthetic resin which has each valve element of both valves, such as it, in one, and it prepares it so that both valves, such as it, can be simply formed only by carrying out fitting of this valve portion material to vertical tube circles.

[0004]

[Means for Solving the Problem] It consists of a bottle object 1 and a trigger type liquid blowout machine 3 which made this bottle object regio oralis equip with the lower part free [attachment and detachment]. This liquid blowout machine It has the vertical tube section 7 with liquid inlet passage 6 which hangs to the pars basilaris ossis occipitalis in a bottle object, this vertical tube section, and the liquid in-and-out hole 8 open for free passage in a posterior wall of stomach. The cylinder 9 which carries out front projection from the front face of the vertical tube section, and the injection cylinder 10 which carries out front projection from a vertical tube section upper bed, In the trigger type liquid blowout container which has the trigger 11 which hangs from injection cylinder anterior part, and the plunger 12 which fitting is carried out and connects the front end section in the above-mentioned cylinder in the trigger upper part While forming the 1st inward flange 14 which has the 1st flange hole 13 as liquid inlet passage 6 part in the vertical tube section 7 above-mentioned soffit While connecting

with **** 24 underside two or more piece of elastic **** 23 upper beds which the 2nd inward flange 16 with 2nd flange hole 15 which is open for free passage in the injection cylinder 10 was formed [upper beds] in the upper bed section of the vertical tube section 7, and carried out upper part projection from short cylinder 22 top face While forming the valve portion material 21 which really fabricated the reverse skirt-board-like elastic seal cylinder 25 by the projecting synthetic-resin material to the method of the outside of a top from a **** outside surface and making the above-mentioned short cylinder 22 attach to the lower inner surface of the vertical tube section 7 Where it resisted elasticity and the piece 23 of elastic **** is compressed somewhat, carry out a pressure welding to the valve seat 17 in which the underside side periphery of the 2nd flange hole forms the valve element section 26 which the **** upper bed section forms, and a discharge valve 27 is formed. Furthermore, the pressure welding of the upper bed periphery of the elastic seal cylinder 25 was carried out watertight to vertical tube section 7 internal surface of liquid in-and-out hole 8 lower part, and the inlet valve 28 was formed.

[0005]

[Embodiment of the Invention] If a part for the fundamental structured division is briefly explained about a drawing below, 1 will stand up a top neck part 2 with a bottle object. 3 is a trigger type liquid blowout machine, and this liquid blowout machine is made to pinch by the inward flange of wearing cylinder 5 upper bed in which the outward flange which hung and attached the underside to the base cylinder section 4 to the pars intermedia outside surface of this base cylinder section was made to screw to a top neck part up end face and a top neck part outside surface. It is characterized by equipping this liquid blowout machine with the following. The vertical tube section 7 used as the double cylinder with liquid inlet passage 6 which hangs to the pars basilaris ossis occipitalis in a bottle object The cylinder 9 which has this vertical tube section and the liquid in-and-out hole 8 open for free passage in a posterior wall of stomach, and carries out front projection from the front face of the vertical tube section The injection cylinder 10 which carries out front projection from a vertical tube section upper bed The trigger 11 which hangs from injection cylinder anterior part, and the plunger 12 which fitting is carried out into the above-mentioned cylinder, and connects the front end section with a trigger up rear-face part

[0006] If this invention part is explained below, the 1st inward flange 14 which has the 1st flange hole 13 as liquid inlet passage 6 part was formed in the vertical tube section 7 above-mentioned soffit, and the 2nd inward flange 16 open for free passage with 2nd flange hole 15 is formed in the vertical tube section 7 up edge in the back of the injection cylinder 10. The periphery section underside of the 2nd flange hole 15 is formed in a valve seat 17.

[0007] Into the above-mentioned vertical tube section 7, fitting of the valve portion material 21 really fabricated by synthetic-resin material is carried out. While connecting with **** 24 underside two or more piece of elastic **** 23 upper beds which this valve portion material has [upper beds] the short cylinder 22 in a soffit, and carried out upper part projection from this short cylinder top face It is what projects the reverse skirt-board-like elastic seal cylinder 25 from the lower periphery of **** 24 to the method of the outside of a top. While making the above-mentioned short cylinder 22 lay to 1st inward-flange 14 top face and making it attach to the lower inner surface of the vertical tube section 7 Where it resisted elasticity and the piece 23 of elastic **** is compressed somewhat, the pressure welding of the valve element section 26 which a **** 24 up edge forms is carried out to the previous statement valve seat 17, the pressure welding of the upper bed periphery of nothing and the elastic seal cylinder 25 is carried out to a discharge valve 27 watertight to the internal surface of the vertical tube section 7 of liquid in-and-out hole 8 lower part, and the inlet valve 28 is formed.

[0008] If a trigger 11 is back drawn near and is carried out in the above-mentioned configuration, a plunger 12 will retreat the inside of a cylinder 9, and the inside of the vertical tube section 7 upper part will be pressurized between an inlet valve 28 and the discharge valve 27 in the cylinder back. Then, elastic seal cylinder 25 top face is caudad pushed by the application of pressure, therefore resist energization of the piece 23 of elastic ****, and **** 24 descends. Then, the application-of-pressure indoor liquid which a discharge valve 27 opens and the inside of the above-mentioned cylinder back and the upper part of the vertical tube section 7 forms spouts from the nozzle 31 which this injection

cylinder front end was made to attach through the injection cylinder 10. When a plunger 12 reaches back **, into the slot 32 attached around the cylinder back end section inner surface The seal cylinder 33 attached to the plunger back end enters. Then, it is discharged into a bottle object 1 through the exhaust hole 34 which the seal of the plunger back end to a cylinder 9 was released, and the high voltage liquid of the above-mentioned application-of-pressure interior of a room drilled in the bottom wall part of cylinder pars intermedia through between plunger 12 outside surface and cylinder 9 inner surfaces. By this high voltage liquid blowdown, a high voltage condition is canceled, and therefore, **** 24 goes up and, as for the application-of-pressure interior of a room, closes a discharge valve 27.

[0009] Subsequently, since the flat spring 35 which projects from the lower back of a liquid blowout machine to the ascending front will press below the lever 36 which projects from trigger 11 upper bed to the bottom back of slant if a trigger 11 is detached, a trigger 11 slides to the front by this energization, therefore a plunger 12 is advanced. The inside of the cylinder 9 back and the upper part of the vertical tube section 7 will be negative-pressure-ized by this plunger advance, then an inlet valve 28 flows also into the application-of-pressure interior of a room which the inside of the above-mentioned cylinder back and the upper part of the vertical tube section 7 forms through an aperture and the liquid inlet passage 6, and the liquid in a bottle object cancels the negative pressure condition.

[0010]

[Effect of the Invention] While connecting with **** 24 underside two or more piece of elastic **** 23 upper beds which this invention is considered [upper beds] as a previous statement configuration, and carried out upper part projection from short cylinder 22 top face into the vertical tube section 7 with liquid inlet passage 6 which hangs to the bottom circles of a bottle object 1 While making the short cylinder 22 attach the valve portion material 21 which really fabricated the reverse skirt-board-like elastic seal cylinder 25 by the projecting synthetic-resin material to the method of the outside of a top from a **** outside surface to the lower inner surface of the vertical tube section 7, where it resisted elasticity and the piece 23 of elastic **** is compressed somewhat Carry out a pressure welding to the valve seat 17 in which the 2nd flange hole periphery section underside of the 2nd inward flange 16 attached to the vertical tube section 7 up edge forms the valve element section 26 which the **** upper bed section forms, and a discharge valve 27 is formed. To moreover, the vertical tube section internal surface of liquid in-and-out hole 8 lower part which opens the inside of the vertical tube section 7 and a cylinder 9 for free passage Since the pressure welding of the upper bed periphery of the above-mentioned elastic seal cylinder 25 was carried out watertight and the inlet valve 28 was formed, an inlet valve and a discharge valve can be formed by one valve portion material, and there is convenience which can simplify structure compared with the case where both valves, such as it, are prepared independently.

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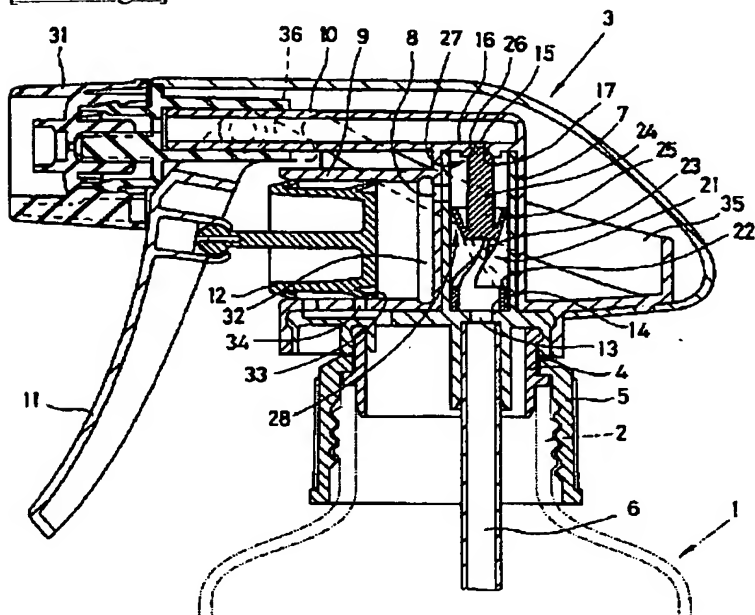
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DRAWINGS

[Drawing 1]



[Translation done.]

(19)



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(72) Inventor: **NOZAWA TAKAMITSU**

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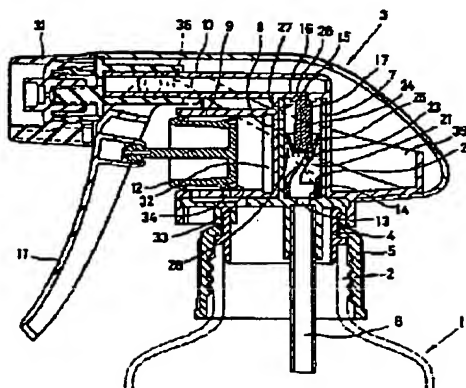
below a liq. passage hole 8 to form a suction valve 28.

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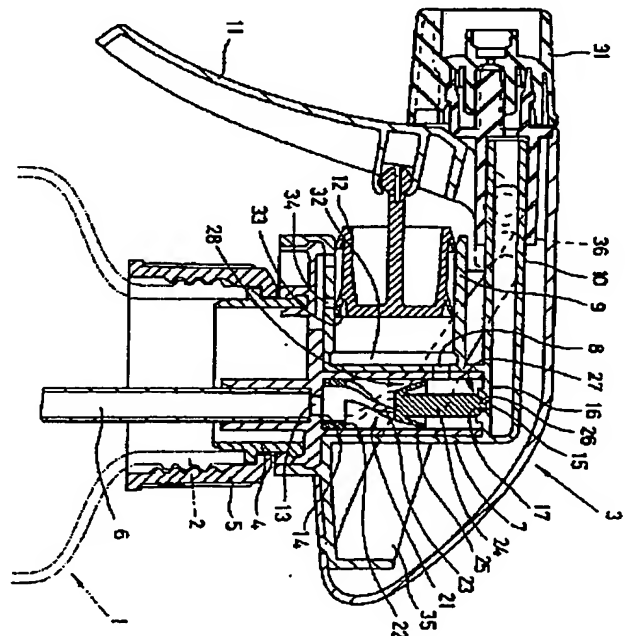
(74) 代理人 弁理士 今岡 良夫

(54) 【発明の名称】 トリガー式液体噴出容器

(57) 【要約】

【課題】 トリガー式液体噴出容器が有する吸込み弁と吐出弁とを、合成樹脂材で一体成形した 1 個の弁部材で形成できるように設けた。

【解決手段】 トリガー式液体噴出容器の噴出器が有する縦筒部 7 内へ、短筒 22 上面から上方突出させた複数の弾性螺糸片 23 上端を栓棒 24 下面へ連結すると共に、栓棒 24 外面から上外方へ逆スカート状の弾性シール筒 25 を突出する弁部材 21 を、短筒 22 を縦筒部 7 の下部内へ嵌着させると共に、弾性螺糸片を圧縮した状態で、栓棒上端の弁体部 26 を縦筒部 7 上端に付設した第 2 内向きフランジ 16 の第 2 フランジ孔外周部下面へ圧接して吐出弁 27 に、又弾性シール筒 25 上端外周を、液体出入口 8 下方の縦筒部内壁面へ圧接させて吸込み弁 28 に、それぞれ形成した。



【特許請求の範囲】

【請求項 1】 容器体 1 と、該容器体口部へ下部を着脱自在に装着させたトリガー式液体噴出器 3 とからなり、該液体噴出器は、容器体内底部まで垂下する液体吸込み路 6 付きの縦筒部 7 と、該縦筒部と連通する液体出入孔 8 を後壁に有して、縦筒部前面から前方突出するシリンダ 9 と、縦筒部上端から前方突出する射出筒 10 と、射出筒前部から垂下するトリガー 11 と、上記シリンダ内に嵌合されて前端部をトリガー上部へ連結するプランジャ 12 とを有するトリガー式液体噴出容器において、上記縦筒部 7 下端に液体吸込み路 6 一部としての第 1 フランジ孔 13 を有する第 1 内向きフランジ 14 を設けると共に、縦筒部 7 の上端部に射出筒 10 内と連通する第 2 フランジ孔 15 付きの第 2 内向きフランジ 16 を設け、短筒 22 上面から上方突出させた複数の弾性螺糸片 23 上端を栓棒 24 下面へ連結すると共に、栓棒外面から上外方へ逆スカート状の弾性シール筒 25 を突出する、合成樹脂材で一体成形した弁部材 21 を設けて、上記短筒 22 を縦筒部 7 の下部内面へ嵌着させると共に、弾性螺糸片 23 を弾性に抗して多少圧縮した状態で、栓棒上端部が形成する弁体部 26 を第 2 フランジ孔の下面側周縁が形成する弁座 17 へ圧接させて吐出弁 27 を形成し、更に弾性シール筒 25 の上端外周を、液体出入孔 8 下方の縦筒部 7 内壁面へ水密に圧接させて吸込み弁 28 を形成したことを特徴とするトリガー式液体噴出容器。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】 本発明はトリガー式の液体噴出容器に関する。

【0002】

【従来の技術】 例えば特開平 8-266964 号が示すように、液体吸込み路としての吸上げパイプを下端から垂下する縦筒部と、該縦筒部と連通する液体出入孔を後壁に有して、縦筒部前面から前方突出するシリンダと、縦筒部上端から前方突出する射出筒と、射出筒前部から垂下するトリガーと、上記シリンダ内に嵌合されて前端部をトリガー上部へ連結するプランジャとを有するトリガー式液体噴出器下部を、容器体口部へ着脱自在に装着させたトリガー式液体噴出容器が広く使用されている。

【0003】

【発明が解決しようとする課題】 上記トリガー式液体噴出容器は、トリガー引寄せによりプランジャがシリンダ内を後退すると、シリンダ内高圧化で液体出入孔、および射出筒を通して該射出筒前端に装着させたノズルからシリンダ内液体を噴出し、又トリガーを離すと、プランジャが自動復帰してシリンダ内が負圧化し、すると吸上げパイプを通して容器体内液体がシリンダ内へ吸込まれるよう設けたもので、通常縦筒部の下部内に吸込み弁を、又縦筒部の上部内に吐出弁を有するが、これ等は別々に設けるために面倒があった。本発明はそれ等両弁の

各弁体を一体に有する合成樹脂製の弁部材を設けて、該弁部材を縦筒部内へ嵌合させるだけでそれ等両弁を簡易に形成できるよう設けたものである。

【0004】

【課題を解決するための手段】 容器体 1 と、該容器体口部へ下部を着脱自在に装着させたトリガー式液体噴出器 3 とからなり、該液体噴出器は、容器体内底部まで垂下する液体吸込み路 6 付きの縦筒部 7 と、該縦筒部と連通する液体出入孔 8 を後壁に有して、縦筒部前面から前方突出するシリンダ 9 と、縦筒部上端から前方突出する射出筒 10 と、射出筒前部から垂下するトリガー 11 と、上記シリンダ内に嵌合されて前端部をトリガー上部へ連結するプランジャ 12 とを有するトリガー式液体噴出容器において、上記縦筒部 7 下端に液体吸込み路 6 一部としての第 1 フランジ孔 13 を有する第 1 内向きフランジ 14 を設けると共に、縦筒部 7 の上端部に射出筒 10 内と連通する第 2 フランジ孔 15 付きの第 2 内向きフランジ 16 を設け、短筒 22 上面から上方突出させた複数の弾性螺糸片 23 上端を栓棒 24 下面へ連結すると共に、栓棒外面から上外方へ逆スカート状の弾性シール筒 25 を突出する、合成樹脂材で一体成形した弁部材 21 を設けて、上記短筒 22 を縦筒部 7 の下部内面へ嵌着させると共に、弾性螺糸片 23 を弾性に抗して多少圧縮した状態で、栓棒上端部が形成する弁体部 26 を第 2 フランジ孔の下面側周縁が形成する弁座 17 へ圧接させて吐出弁 27 を形成し、更に弾性シール筒 25 の上端外周を、液体出入孔 8 下方の縦筒部 7 内壁面へ水密に圧接させて吸込み弁 28 を形成した。

【0005】

【発明の実施の形態】 以下図面について基本的構造部分を簡単に説明すると、1 は容器体で口頸部 2 を起立する。3 はトリガー式液体噴出器で、該液体噴出器は、その下面から基筒部 4 を垂下し、該基筒部の中間部外面に付設した外向きフランジを、口頸部上端面と口頸部外面へ螺合させた装着筒 5 上端の内向きフランジとで挟持させている。該液体噴出器は、容器体内底部まで垂下する液体吸込み路 6 付きの二重筒とした縦筒部 7 と、該縦筒部と連通する液体出入孔 8 を後壁に有して、縦筒部前面から前方突出するシリンダ 9 と、縦筒部上端から前方突出する射出筒 10 と、射出筒前部から垂下するトリガー 11 と、上記シリンダ内に嵌合されて前端部をトリガー上部後面部分へ連結するプランジャ 12 とを有する。

【0006】 以下本発明部分について説明すると、上記縦筒部 7 下端には液体吸込み路 6 一部としての第 1 フランジ孔 13 を有する第 1 内向きフランジ 14 を設け、又縦筒部 7 上端部には射出筒 10 の後部内と連通する第 2 フランジ孔 15 付きの第 2 内向きフランジ 16 を設けている。その第 2 フランジ孔 15 の外周部下面は弁座 17 に形成している。

【0007】 上記縦筒部 7 内へは合成樹脂材で一体成形した弁部材 21 を嵌合させる。該弁部材は、下端に短筒 22

を有し、該短筒上面から上方突出させた複数の弾性螺糸片23上端を栓棒24下面へ連結すると共に、栓棒24の下部外周から上外方へ逆スカート状の弾性シール筒25を突出するもので、上記短筒22を、第1内向きフランジ14上面へ載置させて縦筒部7の下部内面へ嵌着させると共に、弾性螺糸片23を弾性に抗して多少圧縮した状態で、栓棒24上端部が形成する弁体部26を、既述弁座17に圧接させて吐出弁27となし、弾性シール筒25の上端外周を、液体出入孔8下方の縦筒部7の内壁面へ水密に圧接させて吸込み弁28を形成している。

【0008】上記構成において、トリガー11を後方へ引寄せすると、プランジャ12がシリンダ9内を後退してシリンダ後部内および吸込み弁28と吐出弁27との間に縦筒部7上部内が加圧され、するとその加圧により弾性シール筒25上面が下方に押され、よって弾性螺糸片23の付勢に抗して栓棒24が下降し、すると吐出弁27が開いて上記シリンダ後部内および縦筒部7の上部内とが形成する加圧室内液体が射出筒10を通して該射出筒前端に嵌着させたノズル31から噴出する。プランジャ12が後限に達したとき、シリンダ後端部内面に周設した溝32内へ、プランジャ後端に付設したシール筒33が入り、するとシリンダ9に対するプランジャ後端のシールが解放されて上記加圧室内の高圧液体がプランジャ12外面とシリンダ9内面との間を通してシリンダ中間部の底壁部分に穿設した排気孔34を通して容器体1内へ排出される。該高圧液体排出により加圧室内は高圧状態が解消され、よって栓棒24が上昇して吐出弁27を閉じる。

【0009】次いでトリガー11を離すと液体噴出器の下部後方から斜上前方へ突出する板バネ35がトリガー11上端から斜下後方へ突出するレバー36を下方へ押圧しているため、該付勢によりトリガー11が前方へ摺動し、従ってプランジャ12を前進させる。該プランジャ前進により、

シリンダ9後部内および縦筒部7の上部内は負圧化することとなり、すると吸込み弁28が開き、液体吸込み路6を通して容器体内液体が上記シリンダ後部内および縦筒部7の上部内とが形成する加圧室内へも流入し、その負圧状態を解消する。

【0010】

【発明の効果】本発明は既述構成とするもので、容器体1の底部内まで垂下する液体吸込み路6付きの縦筒部7内へ、短筒22上面から上方突出させた複数の弾性螺糸片23上端を栓棒24下面へ連結すると共に、栓棒外面から上外方へ逆スカート状の弾性シール筒25を突出する、合成樹脂材で一体成形した弁部材21を、短筒22を縦筒部7の下部内面へ嵌着させると共に弾性螺糸片23を弾性に抗して多少圧縮した状態で、栓棒上端部が形成する弁体部26を、縦筒部7上端部に付設した第2内向きフランジ16の第2フランジ孔外周部下面が形成する弁座17に圧接させて吐出弁27を形成し、又縦筒部7内とシリンダ9内とを連通する液体出入孔8下方の縦筒部内壁面へ、上記弾性シール筒25の上端外周を水密に圧接させて吸込み弁28を形成したから、1個の弁部材で吸込み弁と吐出弁とを形成でき、それ等両弁を別々に設ける場合に比べて構造を簡易とすることが出来る便利がある。

【図面の簡単な説明】

【図1】 本発明液体噴出容器の断面図である。

【符号の説明】

7…縦筒部	8…液体出入孔
9…シリンダ	10…射出筒
21…弁部材	22…短筒
23…弾性螺糸片	24…栓棒
25…弾性シール筒	27…吐出弁
28…吸込み弁	

【図 1】

